

Department of Energy

§ 431.110

Product	Energy efficiency descriptor	Use test setup, equipment and procedures in sub-section labeled "Method of Test" of	With these additional stipulations
Electric Storage and Instantaneous Water Heaters.	Standby Loss	ANSI Z21.10.3–1998, § 2.10**.	D. For electric products, apply the following in conducting the standby loss test: (1) Assume that the thermal efficiency (Et) of electric water heaters with immersed heating elements is 98 percent. (2) Maintain the electrical supply voltage to within ±5 percent of the center of the voltage range specified on the water heater nameplate. (3) If the set up includes multiple adjustable thermostats, set the highest one first to yield a maximum water temperature in the specified range as measured by the topmost tank thermocouple. Then set the lower thermostat(s) to yield a maximum mean tank temperature within the specified range.
	Standby Loss	ANSI Z21.10.3–1998, § 2.10**.	

*As to hot water supply boilers with a capacity of less than 10 gallons, these test methods become mandatory on October 21, 2005. Prior to that time, you may use for these products either (1) these test methods if you rate the product for thermal efficiency, or (2) the test methods in Subpart E if you rate the product for combustion efficiency as a commercial packaged boiler.
**Incorporated by reference, see § 431.105.

§ 431.107 Uniform test method for the measurement of energy efficiency of commercial heat pump water heaters [Reserved]

ENERGY CONSERVATION STANDARDS

§ 431.110 Energy conservation standards and their effective dates.

Each commercial storage water heater, instantaneous water heater, unfired hot water storage tank and hot water supply boiler¹ must meet the applicable energy conservation standard level(s) as follows:

Product	Size	Energy conservation standard ^a (products manufactured on and after October 29, 2003) ^b	
		Minimum thermal efficiency	Maximum standby loss ^c
Electric storage water heaters.	All	N/A	0.30 + 27/V _m (%/hr)
Gas-fired storage water heaters.	≤155,000 Btu/hr ...	80%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)
	>155,000 Btu/hr ...	80%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)
Oil-fired storage water heaters.	≤155,000 Btu/hr ...	78%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)
	>155,000 Btu/hr ...	78%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)
Gas-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	80%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)
Oil-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	78%	Q/800 + 110(V _r) ^{1/2} (Btu/hr)

Product	Size	Minimum thermal insulation	
Unfired hot water storage tank.	All	R–12.5	

^a V_m is the measured storage volume and V_r is the rated volume, both in gallons. Q is the nameplate input rate in Btu/hr.
^b For hot water supply boilers with a capacity of less than 10 gallons: (1) the standards are mandatory for products manufactured on and after October 21, 2005, and (2) products manufactured prior to that date, and on or after October 23, 2003, must meet either the standards listed in this table or the applicable standards in Subpart E of this Part for a "commercial packaged boiler."
^c Water heaters and hot water supply boilers having more than 140 gallons of storage capacity need not meet the standby loss requirement if (1) the tank surface area is thermally insulated to R–12.5 or more, (2) a standing pilot light is not used and (3) for gas or oil-fired storage water heaters, they have a fire damper or fan assisted combustion.

¹ Any packaged boiler that provides service water, that meets the definition of "commercial packaged boiler" in subpart E of this part, but does not meet the definition of "hot water supply boiler" in subpart G, must meet the requirements that apply to it under subpart E.

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[69 FR 61983, Oct. 21, 2004; 69 FR 63574, Nov. 2, 2004]

Subparts H–I [Reserved]

Subpart J—Provisions for Commercial HVAC & Water Heating Products

SOURCE: 69 FR 61941, Oct. 21, 2004, unless otherwise noted.

§ 431.171 Purpose and scope. [Reserved]

§ 431.172 Definitions.

The following definitions apply for purposes of subparts D through G and J through M of this part. Other terms in these subparts shall be as defined elsewhere in this Part and, if not defined in this part, shall have the meaning set forth in Section 340 of the Act.

Basic model means, with respect to a commercial HVAC & WH product, all units of such product, manufactured by one manufacturer, which have the same primary energy source and which do not have any differing electrical, physical, or functional characteristics that affect energy consumption.

Commercial HVAC & WH product means any small or large commercial package air-conditioning and heating equipment, packaged terminal air conditioner, packaged terminal heat pump, commercial packaged boiler, hot water supply boiler, commercial warm air furnace, instantaneous water heater, storage water heater, or unfired hot water storage tank.

Flue loss means the sum of the sensible heat and latent heat above room temperature of the flue gases leaving the appliance.

Industrial equipment means an article of equipment, regardless of whether it is in fact distributed in commerce for industrial or commercial use, of a type which:

- (1) In operation consumes, or is designed to consume energy;
- (2) To any significant extent, is distributed in commerce for industrial or commercial use; and
- (3) Is not a “covered product” as defined in Section 321(2) of EPCA, 42

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U.S.C. 6291(2), other than a component of a covered product with respect to which there is in effect a determination under Section 341(c) of EPCA, 42 U.S.C. 6312(c).

Private labeler means, with respect to a commercial HVAC & WH product, an owner of a brand or trade mark on the label of a product which bears a private label. A commercial HVAC & WH product bears a private label if:

- (1) Such product (or its container) is labeled with the brand or trademark of a person other than a manufacturer of such product;
- (2) The person with whose brand or trademark such product (or container) is labeled has authorized or caused such product to be so labeled; and
- (3) The brand or trademark of a manufacturer of such product does not appear on such label.

Subpart K—Enforcement

SOURCE: 69 FR 61941, Oct. 21, 2004, unless otherwise noted.

§ 431.190 Purpose and scope.

This subpart describes violations of EPCA’s energy conservation requirements, specific procedures we will follow in pursuing alleged non-compliance of an electric motor with an applicable energy conservation standard or labeling requirement, and general procedures for enforcement action, largely drawn directly from EPCA, that apply to both electric motors and commercial HVAC & WH products.

§ 431.191 Prohibited acts.

(a) Each of the following is a prohibited act under sections 332 and 345 of the Act:

- (1) Distribution in commerce by a manufacturer or private labeler of any “new covered equipment” which is not labeled in accordance with an applicable labeling rule prescribed in accordance with Section 344 of the Act, and in this part;